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UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/626,792	07/24/2003	David R. Cheriton	CIS0192US	1225

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EXAMINER
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ART UNIT	PAPER NUMBER
2619	

NOTIFICATION DATE	DELIVERY MODE
11/01/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

lclark@cspatents.com
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PTOL-90A (Rev. 04/07)

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _21 August 2007_.

2a)☒ This action is **FINAL**.   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) _1-14,17-81,83 and 85-92_ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-14 17-81 83 85-92_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

        1.☐ Certified copies of the priority documents have been received.

        2.☐ Certified copies of the priority documents have been received in Application No. _____.

        3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> . Patentability shall not be negatived by the manner in which the invention was made.

2.   The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148

USPQ 459 (1966), that are applied for establishing a background for determining

obviousness under 35 U.S.C. 103(a) are summarized as follows:

1.   Determining the scope and contents of the prior art.
2.   Ascertaining the differences between the prior art and the claims at issue.
3.   Resolving the level of ordinary skill in the pertinent art.
4.   Considering objective evidence present in the application indicating
        obviousness or nonobviousness.

3.   Claims **1-14, 17-81, 83, and 85-92** are rejected under 35 U.S.C. 103(a) as being

unpatentable over Khansari et al. (US 6,446,131) in view of Reiss (US 2004/0267945).

Regarding claim 1, Khansari teaches a duplicate packet map (see col. 7 lines

38-45); a DPM bank, wherein the DPM bank comprises the DPM (see col. 7 lines 39-

41). Khansari teaches all the subject matter of the claimed invention with the exception

of a plurality of DPMs. However, Reiss teaches a plurality of DPMs (see paragraph 115

lines 1-5). Thus, it would have been obvious to one of ordinary skill in the art to use the

system of Reiss in the system of Khansari. The motivation for doing so is to increase

the capacity to store previously received packets.

Regarding claim 2, Khansari further teaches a plurality of DPM fields (see col. 7 lines 46-56; There are multiple bytes in the index.).

Regarding claim 3, Khansari further teaches the DPM is configured to receive a packet summary value (see col. 7 lines 38-45; FCS field of the frame corresponds to a PSV.).

Regarding claim 5, Khansari further teaches a one of said DPM fields corresponds to the PSV (see col. 7 lines 38-45).

Regarding claim 6, Khansari further teaches each of the DPM fields corresponds to a bit in the PSV (see col. 7 lines 57-63).

Regarding claim 7, Khansari further teaches each of the DPM fields is configured to compare a value of a corresponding bit of the PSV with a value stored in each of the DPM fields to generate an output, and a value of each of the outputs indicates whether the value of the corresponding bit of the PSV matches the value stored in the each of the DPM fields (see col. 7 lines 50-56; The index generated from the FCS is compared to the index in the table. The matching index then indicates if the packet was previously received.).

Regarding claim 8, Khansari further teaches each of the DPM fields is configured to be addressed using the PSV, and a value stored in a one of the DPM fields corresponding to a value of the PSV indicates whether the packet is the duplicate packet (see col. 7 lines 46-56).

Regarding claim 9, Khansari further teaches a packet summary value generator, where the duplicate packet map is coupled to the PSV generator (see col. 7 lines 46-56).

Regarding claim 10, Khansari further teaches the PSV generator is configured to generate a PSV based on a packet received by the PSV generator (see col. 7 lines 46-56), and the DPM is configured to receive the PSV (see col. 7 lines 46-50).

Regarding claim 11, Khansari further teaches a plurality of DPM fields (see col. 7 lines 46-51; The index of the hash table has multiple bits.).

Regarding claim 12, Khansari further teaches one the DPM fields corresponds to the PSV (see col. 7 lines 51-56; The index is matched to determine whether or not the packet has been previously received.).

Regarding claim 13, Khansari further teaches each of the DPM fields corresponds to a bit in the PSV (see col. 7 lines 46-51).

Regarding claims 14 and 17, Khansari teaches all the subject matter of the claimed invention with the exception of a Bloom filter. However, it is well known in the art to use a Bloom filter with a hash table. Thus, it would have been obvious to one of ordinary skill in the art to use a Bloom filter with the hash table as taught by Khansari. The motivation for doing so is to make the table more space efficient.

Regarding claim 18, 47, 61, 74, and 87, Khansari teaches all the subject matter of the claimed invention with the exception of a plurality of DPMs. Reiss teaches a plurality of DPMs (see paragraph 115 lines 1-5). It is well known in the art that the received packet can be compared with a current map. Thus, it would have been

obvious to one of ordinary skill in the art to use a current map. The motivation for doing

so is to make the system more efficient by focusing on the current map.

Regarding claim 19, Khansari teaches a DPM addressing unit coupled to said

DPM (see col. 7 lines 50-56; The addressing unit provides the PSV to the table.) and a

DPM control unit, coupled to control the DPM addressing unit and the DPM (see col. 7

lines 39-45; The control unit controls the duplicate packet detection/processing.).

Khansari teaches all the subject matter of the claimed invention with the exception of

multiple DPMs and a selection unit.

However, Reiss teaches multiple DPMs (see paragraph 115 lines 1-5) and a

selection unit coupled to the DPMs (see paragraph 115 lines 1-5; The selection unit

selects between the multiple DPMs/tables.). Thus, it would have been obvious to one of

ordinary skill in the art to use the system of Reiss in the system of Khansari. The

motivation for doing so is to increase the capacity to store previously received packets.

Regarding claim 20, Khansari teaches all the subject matter of the claimed

invention with the exception of a plurality of DPMs. Reiss teaches a plurality of DPMs

(see paragraph 115 lines 1-5). It is well known in the art that the received packet can

be compared with a current map. Thus, it would have been obvious to one of ordinary

skill in the art to use a current map. The motivation for doing so is to make the system

more efficient by focusing on the current map.

Regarding claim 21, Khansari teaches the control unit providing the PSV to the

DPM (see col. 7 lines 50-56). Khansari teaches all the subject matter of the claimed

invention with the exception of multiple DPMs.

However, Reiss teaches providing the PSV to a selected one of the multiple DPMs (see paragraph 122 1-5) and a current and previous DPM (see paragraph 115 lines 1-7; There is a current DPM/table and the other tables are the previous tables.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Reiss in the system of Khansari. The motivation for doing so is to increase the capacity to store previously received packets.

Regarding claim 22, Khansari teaches clearing an inactive portion of the DPM (see col. 8 lines 1-5). Khansari teaches all the subject matter of the claimed invention with the exception of multiple DPMs.

However, Reiss teaches multiple DPMs and clearing the older/inactive DPM (see 115 lines 1-7). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Reiss in the system of Khansari. The motivation for doing so is to increase the capacity to store previously received packets.

Regarding claim 23, Khansari further teaches a packet summary value generator, where the duplicate packet map is coupled to the PSV generator (see col. 7 lines 39-45).

Regarding claim 24, Khansari teaches a DPM addressing unit coupled between the PSV generator and the DPM (see col. 7 lines 50-56; The addressing unit provides the PSV to the table.) Khansari teaches all the subject matter of the claimed invention with the exception of multiple DPMs and a selection unit.

However, Reiss teaches multiple DPMs (see paragraph 115 lines 1-5) and a selection unit coupled to the DPMs (see paragraph 115 lines 1-5; The selection unit

selects between the multiple DPMs/tables.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Reiss in the system of Khansari. The motivation for doing so is to increase the capacity to store previously received packets.

Regarding claim 25, Khansari teaches and a DPM control unit, coupled to control the DPM addressing unit and the DPM (see col. 7 lines 39-45; The control unit controls the duplicate packet detection/processing.). Khansari teaches all the subject matter of the claimed invention with the exception of multiple DPMs and a selection unit.

However, Reiss teaches multiple DPMs (see paragraph 115 lines 1-5) and a selection unit coupled to the DPMs (see paragraph 115 lines 1-5; The selection unit selects between the multiple DPMs/tables.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Reiss in the system of Khansari. The motivation for doing so is to increase the capacity to store previously received packets.

Regarding claim 26, Khansari teaches the hit signal indicates that bit values of the PSV match bit values stored in corresponding locations in a DPM (see col. 7 lines 46-51). Khansari teaches all the subject matter of the claimed invention with the exception of a selection unit and multiple DPMs.

However, Reiss teaches multiple DPMs (see paragraph 115 lines 1-5) and a selection unit coupled to the DPMs (see paragraph 115 lines 1-5; The selection unit selects between the multiple DPMs/tables.). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Reiss in the system of Khansari. The motivation for doing so is to increase the capacity to store previously received packets.

Regarding claim 27, Khansari further teaches the PSV generator is configured to generate a PSV based on a packet received by the PSV generator (see col. 7 lines 43-45), and the DPM is configured to receive the PSV (see col. 7 lines 50-51).

Regarding claim 28, Khansari further teaches the DPM is further configured to indicate that the PSV matches a PSV stored in the DPM (see col. 7 lines 46-50).

Regarding claim 29, Khansari further teaches the PSV is configured to generate the PSV using a cyclic redundancy check computation (see col. 7 lines 50-51).

Regarding claim 30, Khansari further teaches a packet processing unit, the packet processing unit comprising the PSV generator (see col. 7 lines 39-45).

Regarding claim 31, Khansari further teaches the DPM bank comprises the DPM (see col. 7 lines 43-45), the DPM bank is configured to generate a hit signal (see col. 7 lines 46-50), and the DPM bank is coupled to receive the PSV from the PSV generator (see col. 7 lines 50-55) and to provide the hit signal to the packet processing unit (see col. 7 lines 33-43).

Regarding claim 32, Khansari teaches the hit signal indicates that a value of the PSV matches a value stored in a DPM (see col. 7 lines 39-45). Khansari teaches all the subject matter of the claimed invention with the exception of multiple DPMs.

However, Reiss teaches a plurality of DPMs (see paragraph 115 lines 1-5). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Reiss in the system of Khansari. The motivation for doing so is to increase the capacity to store previously received packets.

Regarding claim 33, Khansari teaches the hit signal indicates that bit values of the PSV match bit values stored in corresponding locations in a DPM (see 46-61). Khansari teaches all the subject matter of the claimed invention with the exception of multiple DPMs.

However, Reiss teaches a plurality of DPMs (see paragraph 115 lines 1-5). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Reiss in the system of Khansari. The motivation for doing so is to increase the capacity to store previously received packets.

Regarding claim 34, Khansari further teaches the packet processing unit is configured to process the packet using the hit signal (see col. 7 lines 34-36).

Regarding claim 35, Khansari further teaches the processing includes causing the packet processing unit to drop the packet based on the hit signal (see col. 7 lines 34-36).

Regarding claim 36, 46, 55, 60, 68, 73, 81, and 86, Khansari teaches determining if a field of a duplicate packet map indicates the packet is the duplicate packet (see col. 7 lines 46-50), wherein the determination is made using a DPM, a DPM bank, and a packet summary value corresponding to the packet (see col. 7 lines 50-56). Khansari teaches all the subject matter of the claimed invention with the exception of a plurality of DPMs.

However, Reiss teaches a plurality of DPMs (see paragraph 115 lines 1-5). Thus, it would have been obvious to one of ordinary skill in the art to use the system of

Reiss in the system of Khansari. The motivation for doing so is to increase the capacity

to store previously received packets.

Regarding claims 37, 56, and 69, Khansari further teaches indicating the packet

is the duplicate packet, if the determination determines the packet is the duplicate

packet (see col. 7 lines 46-50).

Regarding claim 38, Khansari further teaches dropping the packet, if the packet

is the duplicate packet (see col. 7 lines 34-36).

Regarding claims 39, 57, 70, and 83, Khansari further teaches comparing the

PSV to the DPM (see col. 7 lines 46-50).

Regarding claim 40, Khansari further teaches the determination is made by

comparing a bit of the PSV with a bit stored in the field of the DPM, and the indicating is

performed if the bit of the PSV matches the bit stored in the field of the DPM (see col. 7

lines 50-56; The index generated from the FCS is compared to the index in the table.

The matching index then indicates if the packet was previously received.).

Regarding claim 41, Khansari further teaches setting the bit stored in the field of

the DPM to a value of the bit of the PSV (see col. 7 lines 46-51).

Regarding claims 42, 58, and 71, Khansari further teaches selecting the field of

the DPM based on the PSV (see col. 7 lines 50-56; The index of the hash table is

selected by matching the index generated from the FCS field.).

Regarding claim 43, Khansari further teaches the determination is made by

selecting the field of the DPM based on a value of the PSV (see col. 7 lines 50-56; The

value of the PSV is the index.) and the indicating is performed if a value stored in the

field of the DPM indicates that the packet is the duplicate packet (see col. 7 lines 46-50).

Regarding claim 44, Khansari further teaches setting the value stored in the field of the DPM, if the packet is not the duplicate packet (see col. 7 lines 50-56).

Regarding claims 45, 59, 72, and 85, Khansari further teaches generating the PSV by generating a cyclic redundancy check value based on information in the packet (see col. 7 lines 50-56).

Regarding claim 48, 62, 75, and 88, Khansari teaches determining if a field of the DPM indicates the packet is the duplicate packet (see col. 7 lines 46-50, using the PSV (see col. 7 lines 50-56). Khansari teaches all the subject matter of the claimed invention with the exception of multiple DPMs.

However, Reiss teaches using multiple DPMs to determine if the packet is the duplicate packet (see paragraph 115 lines 1-5). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Reiss in the system of Khansari. The motivation for doing so is to increase the capacity to store previously received packets to reduce the number of missed duplicate packets.

Regarding claim 49, 63, 76, and 89, Khansari teaches indicating the packet is not the duplicate packet, if the DPM indicates the packet is not the duplicate packet and indicating the packet is the duplicate packet, otherwise (see col. 7 lines 46-50). Khansari teaches all the subject matter of the claimed invention with the exception of multiple DPMs.

However, Reiss teaches using multiple DPMs to determine if the packet is the duplicate packet (see paragraph 115 lines 1-5). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Reiss in the system of Khansari. The motivation for doing so is to increase the capacity to store previously received packets to reduce the number of missed duplicate packets.

Regarding claim 50, 64, 77, and 90, Khansari teaches designating a portion of the table as inactive or previous and using a portion as the current DPM (see col. 8 lines 1-5). Khansari teaches all the subject matter of the claimed invention with the exception of multiple DPMs.

However, Reiss teaches using multiple DPMs and designating a current DPM as well as inactive and previous DPMs (see paragraph 115 lines 1-7). Thus, it would have been obvious to one of ordinary skill in the art to use the system of Reiss in the system of Khansari. The motivation for doing so is to increase the capacity to store previously received packets.

Regarding claim 51, Khansari teaches clearing the inactive portion of the DPM prior to using it as the current DPM (see col. 8 lines 1-5). Khansari teaches all the subject matter of the claimed invention with the exception of multiple DPMs.

However, Reiss teaches using multiple DPMs and designating a current DPM as well as inactive and previous DPMs (see paragraph 115 lines 1-7) and clearing the inactive DPM. Thus, it would have been obvious to one of ordinary skill in the art to use the system of Reiss in the system of Khansari. The motivation for doing so is to increase the capacity to store previously received packets.

Regarding claim 52, 54, 65, 67, 78, 80, 91, and 92, Khansari teaches the act of

periodically reducing the DPM by selecting the inactive and active portions of the DPM

(see col. 8 lines 1-5). Khansari teaches all the subject matter of the claimed invention

with the exception of multiple DPMs.

However, Reiss teaches using multiple DPMs and designating a current DPM as

well as inactive and previous DPMs (see paragraph 115 lines 1-7) and clearing the

inactive DPM. Thus, it would have been obvious to one of ordinary skill in the art to use

the system of Reiss in the system of Khansari. The motivation for doing so is to

increase the capacity to store previously received packets.

Regarding claim 53, 66, and 79, Khansari further teaches a period of the

performing periodically is such that the period is greater than an expected differential

between duplicate packet arrivals and the period is less than a time between packet

retransmissions (see col. 8 lines 6-14).

Response to Arguments

4.   Applicant's arguments filed August 21, 2007 have been fully considered but they

are not persuasive.

Regarding claims 1, 55, 68, and 81, Applicant submits that the cited sections of

Reiss fail to disclose a plurality of DPMs, where the DPMs comprise the DPM.

Examiner respectfully disagrees.

Khansari teaches a table used in determining duplicate packets (see col. 7 lines

38-45). The table is used as a DPM. Reiss teaches tables comprising subtables used

in determining redundant packets. Thus, Reiss does teach using a plurality of DPMs, where the DPMs comprise the DPM.

Conclusion

5.   **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.
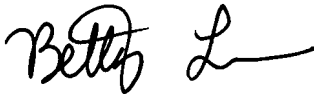
6.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Betty Lee whose telephone number is (571) 270-1412. The examiner can normally be reached on Monday-Thursday 9-5 EST and alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

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Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

USPTO Customer Service Representative or access to the automated information

system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BL

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